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By- St. John, Nancy H.

MINORITY GROUP PERFORMANCE UNDER VARIOUS CONDITIONS OF SCHOOL ETHNIC AND ECONOMIC INTEGRATION: A REVIEW OF RESEARCH.

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This paper is a review of research studies on the relation of school ethnic and socioeconomic composition to the academic performance of Negro children. Pertinent findings from studies using four different types of research design are reported--(1) studies which measure the performance of a minority group under conditions of either segregation or integration, (2) longitudinal studies which use no control group and which measure the same individuals before and after they are in integrated surroundings, (3) cross-sectional studies comparing segregated and integrated students. (Here, special attention is given to the "Coleman Report" and "Racial Isolation in the Public Schools"), and (4) studies involving the "before" and "after" measurement of desegregated and segregated students matched on key variables. Also discussed is the methodological import of school quality and family background as independent variables. It is concluded that a positive relation exists between social class integration and the achievement of minority group pupils. There is some, but less conclusive, evidence of a relation between ethnic integration and achievement. An extensive bibliography is presented. (LB)

MINORITY GROUP PERFORMANCE UNDER VARIOUS CONDITIONS OF SCHOOL ETHNIC AND ECONOMIC INTEGRATION:

A REVIEW OF RESEARCH

Nancy H. St. John, Ed.D
Harvard University

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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ERIC Information Retrieval Center on the Disadvantaged
Ferkauf Graduate School of Humanities and Social Sciences
Yeshiva University
55 Fifth Avenue
New York, N.Y. 10003

INTRODUCTION *

In the 14 years since the Supreme Court ruled de jure school segregation unconstitutional the subject has been in the forefront of the public and scholarly mind. The dictum that segregation is per se harmful to children was based on fine legal and moral arguments, but on rather slim social science evidence. In view of the drastic challenge to the caste system that the decision represented and the extent of the changes called for, it is quite extraordinary that so few empirical tests of the proposition were undertaken in the decade that followed.

Then in 1965 came the Equality of Educational Opportunity Survey. (24) The magnitude of this study in size of sample and number of variables studied, as well as the unexpectedness of its findings, suggests that future scholars will label research on the education of minority children "before Coleman" or "after Coleman". The chief contribution to educational thought of the Coleman Report, and of the Civil Rights Commission Report which followed it, may be evidence as to the importance of economic, as opposed to ethnic, integration. Certainly future studies of conditions favorable to minority group performance cannot now ignore either variable.

That there must be "after Coleman" studies is clear. Both the insights afforded by the survey and its methodological limitations propel us to more definitive research. Many further studies have undoubtedly already been undertaken. To date no longitudinal studies with adequate samples and controls have been published, though reports on an increasing number of small-scale bussing experiments are becoming available. Pieced together, such bits of evidence help define the shape of the larger puzzle and to identify what is known and what is not known.

*The author gratefully acknowledges the assistance of Janaki Tschannerl and Eva Travers in preparation of this monograph.

In this paper I will try to summarize Pre-Coleman, Coleman, and Post-Coleman empirical evidence on the relation of school ethnic and socio-economic composition to the academic performance of minority group children. The task is limited both by my definition of terms and by the availability of relevant research.

I have defined the independent variable as "ethnic composition", since neither scholars nor schoolmen agree on the definitions of segregation, desegregation or integration. One Negro child can produce a "desegregated" school in Alabama, while a northern school which is 70% nonwhite can be termed "segregated". Some use the words racially balanced, de-segregated, non-segregated, and integrated interchangeably, while others distinguish between them according to whether or not the school ethnic mix matches that of its community, whether or not a uni-racial school has become bi-racial, whether the process was planned or unplanned, and whether or not the minority group is accepted into the social life of the school. We are interested in the relation of ethnic composition to academic performance under all these conditions.

Very few pre-Coleman studies have separated the effects of the background of the individual from that of the background of his classmates or the effects of their socio-economic from that of their ethnic characteristics. Therefore, most of the research that I will be reporting will be in terms of the ethnic, not economic, mix of the school. I am interested in each of the minority groups studied by Coleman (Negroes, Puerto Ricans, Mexican Americans, Indian Americans, and Oriental Americans). However, except for the Equality of Educational Opportunity Survey, most of the available research is on Negro Americans. Many potentially interesting

academic outcomes - creativity, curiosity, civic responsibility, moral judgment, artistic taste, human relations sensitivity, to name a few - go unmeasured. Academic performance is usually defined in terms of tests of mental ability, especially verbal ability, and of standardized achievement tests, usually in reading and arithmetic skills. Thus, though the subject of this paper is potentially the relation of school ethnic and economic composition to the total intellectual, artistic and moral development of children of various minority groups, I will for the most part be reviewing research on school racial composition and the test scores of Negro children.

A word about time and space. In an institutional area experiencing such accelerated change as is race relations in America today, we must be cautious about localized or dated research. Trends can be traced by comparing the most recent or most urban with earlier or less urban samples. But a relationship between integration and achievement yesterday in Backwater does not mean a relationship today in Chicago. For this reason I give priority wherever possible to post - 1960 studies in the North. But as the meaning of integration is changing, even contemporary findings may be quickly out of date.

It would always be preferable to limit a review of research in any scientific area to those studies which meet its most rigorous canons of excellence. Unfortunately, as indicated above, there has been such a dearth of research in this area that there would be little to write about if we were too rigorous. Pettigrew, Katz, and Stodolsky and Lesser have each discussed the political and methodological difficulties fishers in these waters must face. (100, 66, 129) Gaining access to a school system in

order to gather data on so controversial a subject is a major obstacle. But the inherent research problems are even greater: The use of tests whose items are culture-fair and whose reliability and validity have been established for the group one is studying is well recognized in theory but often ignored in practice. (37, 39, 71, pp. 37-38) Important too is tester-testee rapport and testing conditions not prejudicial to minority group members. Finding a representative sample of children who can be tested before and after the experience of desegregation, or two samples of children alike in all other respects except in the ethnic composition of their schools, is the real trick, for it is in adequate control of other possible variables that most studies fall down. If a group of children is desegregated and measured before and after desegregation, can we be sure any change is not due merely to maturation, to increased familiarity with the testing situation, to regression to the mean if extreme groups are selected, to some outside community event, or to a temporary Bussing, Newcomer or Hawthorne effect? Or if a segregated classroom is compared with an integrated classroom is there any proof that the pupils' home background and schooling are equal in all other respects.

Two rival independent variables, school quality and family background, are more likely than any other to contaminate research on the effect of ethnic segregation on the performance of children. Before reviewing that research we should take a hard look at each.

ALTERNATIVE INDEPENDENT VARIABLES

School Quality

Before the publication of the Coleman Report few people probably doubted that all-Negro schools are by and large inferior to all-white schools in physical plant, equipment, curricular offerings and teacher qualifications, or that integrated schools fall somewhere in between. Scholars who have compared schools for Negroes and whites in the South, (10, 84, 90) or those who have compared ghetto and non-ghetto schools in the North, certainly reach this conclusion. (26, 43, 52, 70, 105, 120, 149) There have also been repeated reports of the low morale of teachers in ghetto schools, of their low opinion of their pupils and their eagerness to transfer to a more middle class (or white) setting. (12, 22, 49, 54, 137)

In view of such evidence it seems that the low academic performance of minority children could be attributed as much to the poor quality as to the segregation of their schools. Coleman's findings have cast double doubt on this assumption. In the first place, within regions, differences in the schools attended by majority and minority children proved to be quite slight. In the second place differences in schools were found to explain little of the between-school variation in academic achievement.

I do not believe, however, we can brush aside lightly the potential influence of school quality on pupil performance. In the first place the Coleman Report found that the quality of teachers (especially their verbal ability) shows a stronger relationship to pupil achievement than does any other school characteristic and that the relationship becomes greater in the upper grades and is more important to the achievement of minority than majority group pupils. (24, p.22) The reanalyses of the Coleman data by

the Civil Rights Commission shows that differences in the qualifications and attitudes of teachers have a consistent relationship to the performance of 12th grade Negroes in the Northeast when social class factors are controlled. (106, pp. 95-96)

In the second place, I find very convincing the relections of Henry Dyer on the Coleman Survey evidence as to the effects of schooling on achievement. (36) He points out that the survey's sampling problems, its cross-sectional design, its exclusive focus on measures of verbal ability, its technique for computing per-pupil expenditure with district-wide figures - all serve to reduce the relation between quality of schooling and pupil performance. He also refers us to three earlier, large-scale studies, which (though not dealing with the specific problems of minority group children) testify to the relationship between school characteristics and pupil performance. Bowles and Levin are also surely right when they argue that the measures of school resources employed by the Coleman Report were inadequate and were so highly correlated with the background characteristics of students that the separation of the unique effects of each is very difficult. (15) In short, in spite of any Coleman Report evidence to the contrary, it seems highly likely that the quality of schools and their staff generally varies with the proportion of minority group pupils in attendance. Any superiority in the performance of integrated over segregated children may in large part be due to such differences in school quality.

The issue of equality of schooling of segregated and integrated children is raised in a slightly different form by the recent introduction of compensatory programs into most northern school systems. To the extent

that such programs tend to remove former inequities and to equalize education across schools, they act as a control in any study comparing performance in segregated and integrated schools. If they go beyond equalization and offer extra services to the deprived - newer buildings, smaller classes, greater per pupil expenditure, better prepared teachers - they would in theory make it more difficult rather than less difficult to test the effect of ethnic composition per se.

Whatever compensatory programs look like on paper, it is doubtful that any have yet reached the point of offering higher quality of education, in any meaningful sense of the term, in ethnically segregated than in mixed classrooms. At any rate the evidence to date is that such programs have done little to raise the performance of ghetto children. Gordon and Wilkerson find no evaluations of compensatory programs that meet their criteria, but "where evaluative studies have been conducted, the reports typically show ambiguous outcomes". (48, p.157) I will discuss below the Commission on Civil Rights" comparison of the effects of compensatory and bussing programs. Here we should note that the Commission concludes that although such crash programs as the Demonstration Guidance program in New York and the Banneker project in St. Louis seemed at first to produce phenomenal results, these gains were not sustained as the program was expanded over subsequent years. In none of the cities studied, (Syracuse, Berkeley, Seattle, or Philadelphia,) did the programs succeed in materially raising the achievement of minority children in ghetto schools. (106, pp.128-137) Since the publication of that report, the evaluation by Fox of New York's More Effective Schools (over 80% Negro and Puerto Rican) indicates that their program has not produced significant or consistent improvement

in arithmetic or halted the increasing retardation in reading. (41) On the other hand, the most recent evaluation of the Philadelphia EIP does seem to show that greater gains can now be attributed to that program than the Commission reported. (104)

My purpose in discussing compensatory programs has not been to evaluate their effectiveness, but to indicate that this is another variable that may contaminate a study of the relationship between school racial composition and pupil performance. Just as inferiority of instruction and facilities rather than racial mix may explain the lower performance of pupils in segregated than in integrated schools, so too the superiority of a compensatory program might conceivably offset and conceal the negative influence of segregation.

Family Background

The other cluster of variables most likely to contaminate research, on the effect of school segregation and integration on pupil performance is the social and economic level of home and neighborhood.

Many studies attest to the strong relation between measures of socio-economic status and the test scores of minority children. (5, 32, 60, 71, 108, 110) Stodolsky and Lesser have discovered that middle and lower class Negro children are more different in level of four mental abilities than are middle and lower class Chinese, Puerto Rican or Jewish children in New York, or than middle and lower class Chinese and Irish children in Boston. (76, 129) But most researchers have found SES to be a poorer predictor of IQ for Negroes than for whites. (5, 32, 86)

There are two reasons why we might expect to find that social class background is less related to the test scores of minority than of majority

children. One is that the measures of status are not identical for Negroes and whites. Glenn reviews 16 empirical studies of Negro stratification and concludes that formal education is the most important prestige criterion among Negroes, whereas income is more important among whites, a conclusion supported by a recent study in Philadelphia by Parker and Kleiner. (49, 97) Moreover certain jobs have higher prestige in the Negro than in the white community, according to a 1955 investigation in Ohio. (16) Skin color has certainly diminished in importance since the days of the Warner, Junker and Adams Chicago study, but Freeman, et al. report that it is still associated with other attributes of social status in Boston in the 1960's. (135, 44)

A more important reason for the lower correlation of the usual measures of SES and Negro achievement is that they leave unmeasured so many environmental factors in a child's life. Klineberg, and Dreger and Miller, and the Ausubels discuss the caste differences which prevent any level of income, education or occupation from meaning the same kind of life for a Negro as for a white family. (73, 33, 11) A given level of education does not signify the same quality of education, Pettigrew suggests, (100) and is not matched by an equivalent occupational level. Jobs with the same title do not involve the same level of authority or responsibility or earn the same income. Similar income does not buy equivalent housing. And so forth. As Deutsch and Brown, and Moynihan both indicate, Negro life in a caste society is more homogeneous and allows less scope for personal characteristics. (32, 92)

In an attempt to find other measures of a child's home environment that would predict his school achievement better than the usual indices

of socio-economic status, Dave and Wolf have each identified a series of process variables called "achievement press" which together correlate very highly (.80 and .69) with test performance. (29, 147) Their samples were white children in Chicago. But in 1966 Peterson and DeBord interviewed Negro and white 11 year olds in a Southern city and found for Negroes a set of 11 home variables that have a multiple correlation of .82 with achievement scores. (99, as reported in Stodolsky and Lesser) In a similar endeavor, Whiteman, Deutsch and Brown developed a Deprivation Index for their sample of 1st and 5th grade Negro and white children in 12 elementary schools in 3 boroughs of New York City. (140) The Index measures housing dilapidation, number of siblings, kindergarten attendance, educational aspiration of parent for the child, dinner conversation, and family cultural experiences. This index contributes to test performance on Lorge Thorndike non-verbal IQ and WISK vocabulary subtests independently from race and SES, as measured by the occupation and education of the family head.

One aspect of family life of especial importance in the Negro community is the frequency of working mothers and absent fathers. Deutsch and Brown find that the IQ's of children whose father is present is always higher than those of children whose father is absent. (32) Roberts and Stetler both report evidence in support of this finding, but Wilson reports evidence to the contrary. (108, 126, 143) The Coleman Report also declares that"the structural integrity of the home shows very little relation to the achievement of Negroes"but "a strong relation to achievement for the other minority groups."(24,p.302) Finally, Moynihan's reanalysis of Coleman's data shows that as we move from the rural South

to the urban North a stronger relationship between these variables appears. (92)

On the relationship between other aspects of home background and the verbal achievement of minority group children, the evidence of the Coleman and Civil Rights Commission Reports is still stronger and fully corroborates the previous research findings we have been reviewing. Table 3.221.3 (24) shows the overall variance in verbal achievement (both within and between school) accounted for by 8 background factors (urbanism, parental education, father presence, number of siblings, items in the home, reading material, parental interest and aspiration). For Negroes about 14% of the variance in achievement is thus explained, more variance for the other minority groups. The influence of family background on achievement does not diminish over the years. "In the 6th grade, the child's report of items in the home, indicating its economic level, has the highest relation to achievement for all minority groups, while parents' education has the highest relation for whites. In later years, parents' education comes to have the highest relation for nearly all groups." (24, p.302)

Probably the most important finding of the Coleman report is that "attributes of other students account for far more variation in the achievement of minority group children than do any attributes of school facilities and slightly more than do attributes of staff." (24, p.302) Such characteristics of fellow students as their educational aspirations, their attendance record, whether their families own encyclopedias and the hours they spend on homework, is associated with the greatest gain in verbal achievement of Puerto Ricans, Indian Americans, Mexican Americans,

less gain for Negroes and Orientals, and very little gain for whites. This evidence as to the importance of school social class and climate for minority group children corroborates previous findings of Wilson and Michael for white samples. (145, 89) It is also supported by the study performed by Alan Wilson for the Civil Rights Commission. He found that, "allowing for variation in primary-grade mental maturity, the social class composition of the primary school has the largest independent effect upon 6th grade reading level". (143, p.180) Moreover, "the social class composition (in grade 8) has a much more pronounced effect on the achievement of Negroes than of whites. The occupational status of the family and the cultural richness of the home, on the other hand, are much stronger predictors of achievement among white students." (143, p.187)

I will come back to both the Coleman findings and the Wilson study when I discuss below cross-sectional and longitudinal evidence as to the relation between school racial composition and pupil performance. My purpose now has been to establish the fact that both individual social class and the social class of other pupils in a school are positively related to the achievement of minority pupils. It is thus crucial to control fully for these variables in any study of the influence of ethnic composition.

Integration

Scientific inquiry into the effect on children of school integration is plagued by the complexity of the concept and the variety of its possible definitions. The following list of questions suggests the many

alternatives open to researchers and illustrated in the studies to be reviewed:

1) Is the independent variable the relative proportion of one minority group to all other groups or of all minority groups (nonwhites) to the majority group (whites)?

2) Is the independent variable dichotomous (segregated/non-segregated, balanced/unbalanced) or continuous (% nonwhite or % Negro)?

3) Is the unit studied the total society (the South) or the school system, or the school, or the classroom?

4) Are segregated schools and children compared with non-segregated or with de-segregated schools and children? i.e. is change involved?

5) If change is involved, is the object of study the school that is changing racially or the individuals that are moving to a school of a different racial composition?

6) If a school is changing racially is this as a result of neighborhood change, district boundary change, or pupil transfer?

7) If pupils are transfering, does this come through school assignment or parent initiative? Is it mandatory or voluntary? Is bussing involved?

8) Is the research focussed on ethnic mixture only or on the degree of acceptance of minority group pupils by staff and peers as well?

9) Is acceptance defined in terms of objective behavior or subjective perceptions?

10) Does the study separate ethnic from economic integration? What combinations of ethnic and economic statuses are compared?

Four Models for Research Design

In order to establish a causal relation between classroom ethnic composition and academic performance, a researcher must employ the classic model with four cells. Subjects are randomly assigned to experimental and control groups. Both groups are tested before the experimental group

is subjected to the test condition (desegregation), and later both groups are tested again. A greater change between Time 1 and Time 2 for the experimental than the control group can then presumably be attributed to the effect of desegregation. (1, 19, 103, 118, 122, 130)

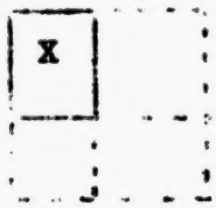
Such longitudinal research is very difficult to achieve in practice. The random assignment to control and experimental conditions usually seems politically and morally indefensible; the loss of cases through migration or school leaving is apt to jeopardize the randomness of the sample; and it is very hard to be sure that other variables haven't affected one group of subjects in the interim betwen tests. Therefore, there are arguments in favor of cross-sectional rather than longitudinal research, or of quasi-experiments with statistical rather than actual control of other variables, even though evidence as to any correlation between key variables cannot be taken as evidence of a causal relation between them.

I will use the 4-cell model as a way of organizing the research evidence we are interested in.

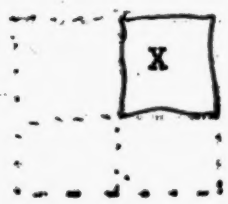
	Time 1	Time 2
Experimental Group	Segregated or Non-segregated	Desegregated or Non-segregated
Control Group	Segregated	Segregated

Because of the paucity of studies in the area I will not reject the evidence of one-celled case studies of minority group performance in

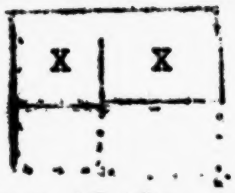
segregated schools



or in integrated schools

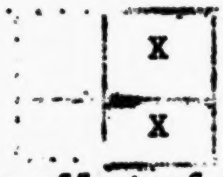


Even though different subjects are involved and we have inadequate control of other variables, something can perhaps be learned from such studies. Next we will look at "before" and "after" studies that have no proper control group:



Selection bias is partly ruled out if the same subjects are tested before, or at the beginning of, a period of non-segregated schooling and again later. The weakness of such studiesis that they provide no assurance that any observed effect is not due to the influence of previous testing, to normal maturation, to extraneous contemporaneous events, or to a change in the quality of schooling.

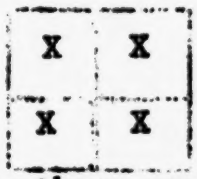
Next we will look at cross-sectional studies without any "before" measurement:



Such studies control for the effect of testing, maturation and history, but not for differences between the schools or classrooms in other respects than ethnic composition. Moreover there is no guarantee as to the original equivalence of the groups that are compared. Systematic differences are found by researchers who compare the characteristics of families living in integrated and segregated neighborhoods (18, 35, 46, 57, 127) or

families who do or do not volunteer for a bussing experiment. (25, 28, 79, 138)

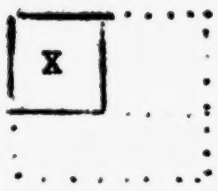
The few studies with all cells filled will complete the review:

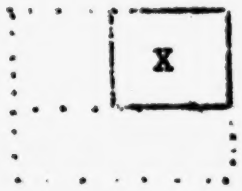


But even here, as we shall see, there are difficulties: small numbers, non-random assignment to control and experimental groups, inadequate control of other variables and so forth.

SCHOOL ETHNIC COMPOSITION AND MINORITY GROUP PERFORMANCE

One-Celled Studies





We begin by reviewing the findings of studies of minority group performance under conditions of either segregation or non-segregation, not both. Any comparisons between the two groups are ours, not the researcher's, and must be extremely approximate and tentative, since we have no assurance that the two sets of samples were equally free of bias in selection, were comparable on other variables, or subjected to similar testing conditions. The variety of tests used is a further complicating factor.

1. Mental Abilities Tests

Some studies measure mental abilities, some studies measure academic achievement, and some use mental ability test scores as controls when measuring achievement. As long as IQ was considered fixed at birth and immune to the effects of environment, it seemed reasonable to focus on

"achievement" within the limits set by "ability" in any study of the outcomes of different types of schooling. The contemporary shift in outlook of psychologists to the view that intelligence is plastic and the product of the interaction of genetic and environmental factors means that we can expect differences in school environment to result in differences in performance on IQ tests, as well as on tests which measure the results of instruction in skills. (101, 129) Support for this proposition is afforded by the frequently observed decline in IQ scores with age for children who are culturally deprived (4, 52, 71, 96, 121), as well as the dramatic rise in scores for those whose environment is suddenly enriched (17, 50, 151)

The object of most studies of the IQ test performance of Negro Americans has been a comparison of Negro-white intelligence, with Negro-Negro comparisons introduced only in order to explain Negro-white differeces. Our purpose is different; we assume no Negro-white difference in genetic potential once environmental conditions are equated, but are interested in Negro-Negro comparisons - children who have been segregated versus children who have been integrated. Studies of Negro-white differences can be useful for our purpose, if the region and ethnic composition of the school as well as the test results are reported (unfortunately often not the case).

Examination of a number of reviews of research on the mental abilities of Negro children , North, Anastasi, Kennedy, Pettigrew, Shuey, (95, 5, 71, 101, 121) as well as a number of recent studies not included in these reviews (4, 50, 108, 109) indicate that in spite of many exceptions and large overlap in distribution, higher mean scores are reported for <u>northern</u> than for <u>southern</u> children* and for northerners in <u>integrated</u>

*In the discussion which follows the reader should assume that children refers to Negro children.

than for northerners in segregated schools. Reported IQ's for southern children are usually in the 80's. In their normative study of the intelligence of Negro elementary school children in 5 Southeastern states, Kennedy found a mean Stanford Binet score of 80.7 with a standard deviation of 12.4. (71) Reported mean IQ's for northern school children are more apt to be in the low 90's. Ames and Ilg report a mean IQ for 5th graders of 93. (4) Deutsch and Brown report a mean Lorge Thorndike (IQ) of 94 for their sample of 1st and 5th graders. (32)

Unless we are specifically informed to the contrary it is safe to assume that the schools in which southern children have been tested have been totally segregated, in staff as well as pupil population. The northern schools may or may not have been predominantly Negro, but at least Negro pupils there were not confined to one half of a dual system and were probably taught by a bi-racial faculty. In those cases in which IQ means have been reported for racially balanced northern schools, they are usually higher than for schools in the ghetto. Thus McCord and Demerath found that in Cambridge, Massachusetts, 10-year old boys in integrated schools had Kuhlman-Anderson median scores between 95 and 99 and Stanford Binet scores between 90 and 95, and in a western community (probably Nevada) McQueen and Church found the scores of Negroes only 6 points below those of whites. (85, 87)

The Coleman evidence will be discussed in greater detail below, but we should note at this point that the strong regional differences in verbal ability of Negro children found in that survey matches the evidence of the many studies cited in the reviews of research. Another type of evidence is that supplied by studies of the northern migration of Negro

children. I will discuss in the next section the evidence of Klineberg and others that the longer southern-born children have resided in the North, the higher their test scores are found to be. (72, 75, 91, 115, 126)

This very general conclusion that the mean IQ test scores of Negro children rises as we move from Southern segregated, to Northern segregated, to Northern integrated schools must be hedged by many reservations. In the first place, the culture bias of tests operates within, as well as between, ethnic groups. Secondly, we are generalizing across the findings of different tests which are normalized on various populations, whose items may not be equally familiar to all Negro children, and whose reliability and validity for Negro sub-groups may not be equally well established. (37, 39) The 5 point difference found by McCord and Demerath between the means on the Kuhlman Anderson and Stanford Binet tests illustrates the common problem of different scores on different tests. (85)

Another difficulty is that, in view of the tendency for scores to decline with age, it is important to compare studies of children of the same age range. It should be noted that not all studies have found lower test scores for minority group children in the older than the younger grades. Though this was the finding of Passamanick and Knobloch and Ames and Ilg in New Haven, of Deutsch and the HARYOU Study in New York City, of Osborne's longitudinal study in the Southwest, of Carlson and Henderson for Mexican Americans and of Shuey, on the basis of a review of many studies, (98, 4, 31, 52, 96, 20, 121) others find no such decline. (53, 107, 119, 133) The reports of cumulative deficit more frequently come from segregated situations, whereas (as we shall see below) the reports of no

increase in Negro-white difference with age are more apt to come from integrated schools or situations in which some treatment intervenes to raise performance.

2. Achievement Tests

A comparison of separate studies of minority group performance on standardized achievement tests in southern and northern schools indicates the same gain, as we move from more segregated to more integrated settings, as do the studies of IQ. For instance, Stallings reports on the results of Stanford Achievement tests in Reading and Arithmetic administered to all 4th and 6th grades in Atlanta in 1956. (124) School-by-school medians in reading at the 6th grade level varied from 2.6 to 4.4, in other words from 1.6 to 3.4 years below grade level. The higher the grade level the greater the mean retardation and the broader the range of scores. Anderson reports on a large random sample of 5th and 8th grade students in Alabama in 1944. (7) Average total achievement of Negroes was a year below grade level. In 1955 Anderson studied the achievement of another random sample in the state and found Negro-white differences of 1.6 years at the 6th grade, 2.6 years at the 9th grade and 3.7 years at the 12th grade.

In the segregated North the academic achievement of Negro school children is also low and declines with age. Deutsch reported on a sample in which the retardation of 4th graders was 1 year, 9 months and that of 6th graders 2 years and 1 month. (31) According to the HARYOU Study in the 20 elementary schools of Central Harlem (91% Negro, 8% Puerto Rican and 1% Other) 30% of the pupils were below and 22% above grade level in

reading at the 3rd grade and 81% below and 12% above at the 6th grade. (52) The per cent who were behind in arithmetic rose from 66% in the 6th grade to 83% in the 8th grade. Wolff reported these achievement scores for Negroes in Gary, Indiana, where de facto school segregation was almost complete: (149)

	Reading	Arithmetic
Grade 4	4.1	3.8
6	5.6	5.8
8	6.9	7.5

In contrast, a report on the integrated Greenburgh School District in New York State indicates that the reading scores of Negroes are on grade level, almost as high as those of whites, and rising: (17)

	1961		1962	
	N	W	N	W
Grade 2	2.1	3.0	2.5	3.3
3	3.2	4.2	3.5	4.8
4	4.1	5.2	4.6	5.8
5	5.1	6.0	5.3	7.3

Since most of the other available studies of Negro performance in elementary integrated settings either compare subjects before and after desegregation or with a control group that remains segregated, we shall discuss those studies below and go on to report the findings of one-celled studies of high school students.

The very poor performance of Southern Negro students on College Entrance tests is an indication of the low standards of segregated southern high schools. The Educational Testing Service found that only 6% of the top ranking Negroes in Southern high schools had scores at or above the median for the country. (45,pp.57,58) But Negro students have not necessarily done much better in integrated Northern schools. Ferguson and Plaut summarized a study of 5 graduating classes in New Jersey and

a nationwide sample of 32 northern integrated high schools and reported that Negroes were rarely in the highest quarter of their class or had the necessary minimum college admission units. (38) A few years later Antonovsky and Lerner gave a more optimistic report of the high school performance of Negroes in Elmira, New York: more Negroes than whites enrolled in the college preparatory program; fewer Negroes dropped out; and in the non-college program their grades surpassed whites. (8) On the other hand, Hickerson reported low achievement for Negroes in a California industrial city. (55) Although the high school is integrated (19% Negro, 13% Mexican American and 5% Filipino), Negroes are under-represented in A sections of English and college preparatory curriculum, even when their father's occupation and their own IQ are controlled.

One aspect of high school performance is remaining in school until graduation. In the year 1956-57 more than 14% of the Negroes, but less than 9% of the whites, withdrew from 10 racially integrated high schools in four Connecticut cities. (126) The report on nonenrollment rates of 16 and 17 year olds found in Chapter 6 of the Coleman Report indicates that in the South a smaller % of Negro boys and girls (15%) are not in school than in the North (19%). The HARYOU Study found that 53% of the students from Central Harlem who enrolled in academic high schools and 61% of those in vocational high schools dropped out without a diploma, although the high schools were outside of Harlem and presumably more integrated than the elementary schools the students had previously attended. (52) This finding points up one reason why minority pupils may not be able to benefit from integrated secondary schools. Their preparation has usually been in segregated (and inferior?) elementary schools.

Evidence as to regional differences in school outcomes is afforded by the results of the Armed Forces Qualification Test. Moynihan quotes these rejection rates for 18-year old Negroes from July, 1964 to December, 1965: 71% to 86% in Tennessee, Georgia, Missouri and South Carolina, but 49% to 56% in California, New York and Illinois. (93)

This comparison of one-celled studies of the performance of minority group children in the North and the South suggests that achievement is highest in integrated schools in the North and lowest in segregated schools in the South. But without adequate controls on other variables, especially the quality of schooling and family background, we cannot reach such a conclusion with any assurance. We will now go on to two-celled studies which afford some control over such factors, first longitudinal studies which measure the same children before and after desegregation, and then cross-sectional studies which compare integrated and segregated students who are statistically equated on other variables.

Longitudinal Studies (One Group)

Several types of studies of desegregation have in common the fact that they involve "before" and "after" measurement of the same individuals, but have no control group. There are studies of the effect on children of the desegregation of 1) a whole system, (which may or may not mean desegregation of all schools), 2) an entire school (which may or may not mean desegregation of all classrooms) or 3) of individuals (which may and may not mean that the system or school had previously been segregated). These types of studies can be further subdivided according to a) whether the desegregated children involved are entering school for the first time

(Kindergarten or Grade 1) or are moving to an integrated school after some experience in a segregated school, b) whether they are measured before or at the beginning of the desegregated experience, c) whether their "after" measurement is compared with their own "before" measurement or with that of a supposedly equivalent group. In any of these cases desegregation can be variously defined, all the way from tokenism to a matching of the racial mix of the classroom and the community.

1. Desegregation of a School System

The two studies which are often referred to as evidence of the beneficial effect of the desegregation of a school system are Hansen's report on the schools of Washington, D.C., and Stallings' on the schools of Louisville, Kentucky. (51, 125) In 1954 the separate school systems for Negroes and whites in the District of Columbia were consolidated, and Hansen reports that between then and 1959 the median city-wide achievement improved at all grade levels and in most subject areas. Unfortunately, for a number of reasons this encouraging finding cannot be accepted as evidence that desegregation was causally related to improved performance of minority group children in Washington. In the first place, no testing of Negro children was done before desegregation (one of the inequalities of the dual system), and no separation of Negro and white scores was reported after desegregation. Improved white scores could therefore have accounted for the higher median. In second place, the scores of the same children are not traced through the years; instead successive 3rd grade (etc.) classes are compared. Migration could produce differences in population characteristics. Next, the actual racial compositon of schools and

classrooms is not considered, and in view of the large and increasing proportion of Negroes in the city in those years, it is likely that most children did not experience much desegregation in their schools. The simultaneous establishment of the track system probably also resulted in considerable classroom segregation in those schools that were technically desegregated. Finally, we are told that with desegregation came major improvements in the quality of education - lowered teacher-pupil ratios, increased budget, more remedial services, - so that these are plausible alternative explanations of the improved performance.

Schools in Louisville were desegregated by court order in 1956. Stallings' report provides more information on two counts than Hansen's did, for we are told that the academic achievement of <u>both Negro and white</u> 2nd, 6th and 8th grade students was significantly higher <u>after than before</u> desegregation. Stallings also found that the Negro students made greater gains than the white students did. But again no assessment was made of the effect of the desegregation of individual schools or classrooms, and there is evidence that most schools remained segregated. The fact that the gains of Negro pupils were greatest when they remained with Negro-teachers (i.e. in all-Negro schools - 21, p.34) indicates that the improvement was due to other variables than to the ethnic composition of the classroom. Stallings suggests that one factor may have been increased motivation due to the fact of legal desegregation.

A number of other studies include reference to academic gains following the desegregation of school systems or schools, but none of these refer to systematic or scientifically designed studies. (21, pp.33 and 37, 25, 139, 142,)

2. Desegregation of Individuals

When comparing the test scores of Northern and Southern Negro children, I mentioned the findings of Klineberg and others that the IQ's of migrants are higher in proportion to length of residence in the North. Such northward migration involves a measure of desegregation even if the children land in Harlem schools, as Klineberg's sample did. At least the system is not dual and many of the teachers are white. The difficulty with most of these studies however is not only that migration may be selective, and that the children are not measured before they arrive, but also that the same individuals are usually not measured in successive years. Nevertheless the findings are impressive. Klineberg reported that on both Stanford-Binet and on group tests New York Negro children scored higher in proportion to their length of residence in the North (72) In order to discover whether migrants are more able than non-migrants he went back to the counties from which his subjects had come and found no difference in previous grades (not tests) between those who left the South and those who stayed behind.

More recently Stetler found a mean IQ for Connecticut adolescents of 91 if they had resided in the state more than 10 years, 84 if they had been in the state less than 10 years. (126) Moriber examined the mean IQ scores of idigenous and in-migrant Negroes and Puerto Ricans and found consistent differences in favor of the indigenous children of both groups, regardless of the % of in-migrants in their schools. (91) Reading, but not arithmetic scores, varied by length of stay for both ethnic groups.

These findings are suggestive, but without before and after measurement of the same migrants we cannot be sure that later arrivals are as able as earlier arrivals. Lee's Philadelphia replication of Klineberg's study is a distinct improvement in this respect, for Lee had longitudinal data on his subjects and could demonstrate that the longer the southern-born Negro children attended the Philadelphia school system, the more their scores on the Chicago Tests of Primary Mental Abilities resembled those of the native-born. (75) By the 6th grade there was no significant difference between the two groups.

In these migration studies any "desegregation" of school and commmunity is only relative to the South. Moreover the effects of several variables are confounded: Community with school desegregation and school desegregation with school quality. We come closer to being able to test the unique effect of school desegregation when individuals enter a mixed school, especially if they do not change residence to a mixed neighborhood.

Katzenmeyer studied the 193 Negro and 1061 white pupils who entered the kindergartens of 16 Jackson, Michigan schools in the years 1957 and 1958. (69) Presumably these children had no previous experience in any school, segregated or integrated. They were given the Lorge Thorndike IQ test at the beginning of the kindergarten and 2nd grade years. On both tests the white children were significantly above the Negro children, but the 2-year gain for white children was 1.87, for Negro children 6.68 - a difference significant at the .001 level. It is unfortunate that no matched control group of Negro children who spent those years in segregated schools was included in the study design. In the dissertation abstract we are told nothing about the social class of the

experimental or comparison groups or how these Negro children came to be enrolled in these schools. There is a strong likelihood that they may have been an elite group whose home background was conducive to rapid learning in an enriched environment.

Under the auspices of the Metropolitan Council for Educational Opportunity (METCO), 218 Negro students from Boston were bussed to 27 suburban schools in 7 communities, beginning September, 1966. A report by Archibald summarizes the achievement gains of a sample of these children during the first year of the program. (9) Pre and post Metropolitan Achievement test scores were available for only 66 children in grades 3-8 in 3 school systems. The IQ mean for these children was 102.4 and normally distributed. On reading and on arithmetic comprehension and problems initial scores were significantly below national norms, on words and spelling only slightly below. Six months later these children were retested and found to be still significantly below national norms in arithmetic, but only slightly below in reading and to have made marked improvement on the word and spelling tests. The improvement on the last 3 tests is significant, in comparison with national norms.

No control group was possible, since the Boston school system did not supply records on its students. No comparisons with white students in the receiving schools are reported. In view of the short duration of the program at the time of reporting, the small numbers involved and the fact that these are spread across 5 grades and 3 school systems, evaluation of the effectiveness of the program must await further reports on the original students and those who followed them. Two serious drawbacks to the experiment from a scientific point of view are the facts that the program involves

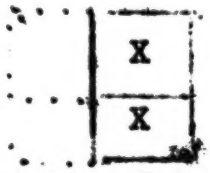
a change of school systems (and so presumably in quality of education) and that parents take the initiative in applying for the program. It is therefore likely that the children are more motivated and of a higher social class background than if they had been randomly selected from Boston's Negro population.

A recent report on a longitudinal study in Hawaiian high schools by Stewart, Dole and Harris may qualify for inclusion here as evidence on the effect of integration on a number of different ethnic groups. (128) Unfortunately many questions of interest to this review are left unanswered. A 20% random sample of all 10th graders in the state were tested and 80% of these retested in the 12th grade on the California Verbal and Quantitative Achievement Test. Chinese and Japanese were at the top on both tests, Hawaiians at the bottom, Filipinos and Caucasians in the middle. All groups showed significant gains over the two years except the Hawaiians. Without any control on social class or on the ethnic composition of previous schools, little can be learned from this potentially interesting study.

The Clark and Plotkin survey of Negro students at integrated colleges belongs in this group of panel studies, since most of the students came from segregated schools and took CEEB Scholastic Aptitude tests before entering college. (23) The "after" measurement is in terms of average grades and the % who stayed through to graduation. The sample consists of the 509 students who returned questionnaires out of the 1519 who received aid or counselling from the National Scholarship and Service Fund for Negro Students between 1952 and 1956. College grades were average, higher than could have been predicted on the basis of test scores, and higher for students from the South than for those from elsewhere. The

net-dropout rate of 10% is 1/4 the national rate, and far below the rate for segregated Negro colleges. This study would have been strengthened by more random sampling, by "after" tests and by the inclusion of a control group of similar students at segregated colleges, as it seems highly likely that many students who applied to the NSSFNS were especially able, motivated and due to succeed wherever they enrolled. However, even with such tests and a control group, there would be no way of knowing whether any differences found were due to the integration or to the quality of the college experience. These criticisms apply not only to the Clark and Plotkin study but to all the "before" and "after" studies that have been here reviewed.

Cross-Sectional Studies



The discussion of cross-sectional studies which compare segregated and integrated students will be divided into a) pre-Coleman studies and b) the findings of the reports, Equality of Educational Opportunity and Racial Isolation in the Schools.

1. Pre-Coleman Studies

The Pre-Coleman Studies are mostly small-scale and inconclusive. Now that we have the monumental Coleman data, their chief interest is historical. Mention should be made, however,of a large-scale survey in the early 1950's of the academic performance of Indian American children in Federal, public and mission schools. Researchers from the University of Kansas, for the Bureau of Indian Affairs, administered California Achievement Tests to nearly 12,400 Indian children and their white classmates in grades 1-12, in 319 schools, in 10 states. (27, 136) Over 20 tribes and 3 culture areas were represented.

For both Indian and white children achievement was higher in northern than in southern states, but, across areas, the following general hierarchy emerged:

1. White pupils in public schools
2. Indian pupils in public schools
3. Indian pupils in Federal schools
4. Indian pupils in mission schools

The authors also found some indication that Indians in public schools did better if the school was half or mostly white.

While most public schools were thus bi-racial, Federal and mission schools were almost entirely segregated. It is nevertheless impossible to know whether the superiority of public school Indian pupils should be attributed to racial integration, to the quality of the schooling they had received, or to the fact that they were more acculturated and less apt to be living on the reservation or to speak English as a second language.

The Negro child is the subject of the other pre-Coleman cross-sectional studies of minority group performance to be reviewed here. In order to compare 5-year old children attending 11 New York Welfare Day Care Centers on the Draw-a-Man Test, Anastasi and d'Angelo drew a sample composed of 25 Negro and 25 white children living in uniracial, unmixed neighborhoods and 25 Negro and 25 white children living in interracial, mixed neighborhoods. (6) The sex distribution and SES was the same in all groups. They found no significant difference according to race or neighborhood.

Wilson's 1960 study of elementary school achievement and aspiration in Berkeley, California, included a number of Negroes in the sample of 6th grade boys. He found that in the schools in the Flats, where Negroes comprised about 66% of the population, their IQ, reading and arithmetic scores were 97, 68 and 51 respectively. In the Foothill schools

(14% Negro) their scores on the same tests were 107, 76 and 57. He also reports that while only 2 out of 20 Negro students in the Foothills are mentioned by teachers as outstanding readers, 14 out of 81 are so mentioned in the Flats. (144, pp.68 and 69, 146)

In a similar study of naturally segregated and non-segregated elementary school children in New York, Jessup compared 1) Negro and Puerto Rican 2nd and 5th graders in a traditional, middle class school 75% white; 2) students in a comparable low SES, project school 96% Negro and Puerto Rican; and 3) students in a new, Higher Horizons school 93% Negro. (59) The sample included all the children in the first two schools and a sample of children from all ability groups in the third school. Since social class (measured by residential census track data) was found to be highly related to achievement, sub-samples of 18 integrated and 80 segregated low SES children were compared on IQ, math and reading. The findings are as follows:

		Integrated (N=18)	Segregated (N=80)
Achievement	High	0	3
	Medium	95	45
	Low	5	52
		100%	100%

5th grade scores were better than 2nd grade scores for the integrated children, worse than the 2nd grade scores for the segregated. The lowest SES children in the integrated school did better than the middle SES children in the segregated school. In spite of its tiny sample and lack of any "before" measurement, this is a good study.

Four recent dissertations have roughly the same design. Meketon gave a battery of tests to Negro 5th and 6th graders in 3 schools in Kentucky, one de-facto segregated, one peacefully integrated, and one integrated

under "anxiety arousing circumstances". (88) Contrary to prediction, children in the latter school had significantly higher scores on the Digit Span Backward and Verbal Meaning Tests. Self-esteem was higher in the segregated school, however. We are not told whether social class was controlled or how the students in the two integrated schools were selected.

Lockwood compared 217 sixth grade Negro students attending balanced and unbalanced (50%+ Negro) schools in a New York State community for two years or longer. (78) On Iowa Tests of Basic Skills the balanced students were significantly higher at all IQ levels. When IQ was not controlled or when students had been less than 2 years in balanced schools, the differences were in the same direction but not significant. Samuels matched students on IQ and SES and found that at the 1st and 2nd grade levels Negroes from segregated schools had higher achievement scores, but in the 3rd through 6th grades the achievement in racially mixed schools improved and eventually surpassed that of segregated children. (117)

The most sophisticated study in this group is Matzen's correlational analysis of the 5th and 7th grade achievement scores of 1,065 Negro and white children in segregated and integrated California schools. (83) Zero order correlations indicated that classroom per cent Negro was significantly and negatively related to Negro achievement. However, when IQ and SES were controlled, the relationship was no longer statistically significant.

Studies of two bussing experiments must be considered cross-sectional, since they lack proper "before" measurement. Wolman reports on the Metropolitan Achievement Test scores of New Rochelle Negro children whose parents elected to transfer them from the all-Negro Lincoln school in their

neighborhood to integrated, middle class schools. (150) Except at the kindergarten level, no statistically significant differences were found between those who transferred and those who stayed, perhaps because as another study has indicated more lower class families transferred. (79) It is also reported that in the year of the study the Lincoln school had the benefit of extra services. (63,p.93)

In 1964 White Plains initiated a racial balance plan which involved closing one elementary school and bussing about 900 Negro pupils from 2 sending schools to 6 receiving schools. (141) Participation was mandatory. A study was made of the IQ and Stanford Reading and Arithmetic tests of 33 of these Negro pupils (from grade 3 in 1964-65 to grade 5 in 1966-67) in predominantly white, newly integrated schools. These children couldn't be compared with currently segregated children, since segregated schools no longer existed in the city. Instead they were compared with a) 129 white students in the same grade in the integrated schools, and b) 36 Negro students who had entered the 3rd grade in the one predominantly Negro central city school in 1960. The newly desegregated 3rd grade Negro children achieved slightly better than the earlier central city Negro children. However, the gap between them and their comparable white group on the verbal tests and arithmetic computation is wider at the 5th grade level than it was for the central city children. The report is very hard to comprehend, and the findings remain inconclusive due to a number of methodological limitations: the small number of students tested, the lack of contemporaneous control group, the absence of significance tests. (82, p.45)

Three studies compare the high school performance of Negroes who attended segregated and integrated elementary schools. St. John reported that with SES controlled there was a non-significant trend towards higher test scores for those New Haven Negroes who had attended more integrated schools. (115, 116) In Plainfield, New Jersey, Wolff found fewer drop-outs, higher reading achievement, higher rank in the graduating class and higher enrollment in further education for the 20 graduates of an elementary school 33% Negro than for the 39 graduates of an all-Negro school.(148) No SES data is available and no tests of the significance of these differences are reported. Vane compared the high school records of 52 Negro children from predominantly white schools in a large suburban community with those of 19 Negro children from a school 89% Negro. (134) IQ averaged 100 for those from both types of school. She then equated 17 matched pairs on IQ and SES and found no significant differences in achievement at any level.

This last investigation notwithstanding, the balance of evidence of pre-Coleman cross-sectional studies is that integration has no negative effect on minority group performance and may have a positive effect, though it is hard to be sure, since so many other variables could account for the observed trends.

2. Equality of Educational Opportunity Survey

In September, 1965, over 600,000 students in a sample of some 4,000 elementary and secondary schools took a series of short ability and achieve-

ment tests and answered questionnaires about their home background and attitudes. The sample of school districts was drawn to be respresentative of regions of the country, but to be overrepresentative of schools enrolling children of 5 minority groups. (24)

The survey finds ethnic segregation to be extreme only in the case of the white and the Negro groups. At grade one almost all white children and 87% of the Negro children are in schools in which their own ethnic group is in the majority. The same is true for only 48% of the Indian children, 30% of the Mexican Americans, 8% of the Puerto Ricans, and 1% of the Orientals. By grade 12, 99% of the white, over half of the other minority children, but only 34% of the Negro children are in majority white schools. (Table 2.14.1)

On the achievement tests, except for Oriental Americans on the nonverbal test at grade 1, the average minority pupil scores lower than the average white pupil on each test and at each level. Following whites are Orientals, Indians, Mexicans, Puerto Ricans and Negroes in this order for the nation as a whole, though the Puerto Rican average is below that of the Negro in the Northeast and Midwest. The disadvantage is greatest in verbal ability for groups of non-English speaking background. The difference increases over the years. There is consistent regional variation, which is greater for Negroes than for whites, though scores for both races are lowest in the non-metropolitan South and highest in the metropolitan North. The relative decline between grades 1 and 12 for Negroes is strongest in the rural South and Southwest. (Tables 3.121.1-3)

Only a small part of the variance in achievement (but more for minority than majority children) is <u>between</u> rather than <u>within</u> schools

(Table 3.22.1). For Negroes and for whites some of the between-school variance is accounted for by differences in family background, but this is not the case for Puerto Ricans, Indians or Orientals. (Table 3.221.2) The characteristics of fellow students account for more of the variance in achievement of minority group children than do any other school characteristics. Oriental children are least affected. (Table 3.22.1) Of the other school characteristics, teacher variables are most important. More of the variance in verbal achievement is accounted for by teacher variables for Puerto Ricans, Indian Americans and Mexican Americans than for Negroes, and more for Negroes than for Oriental Americans or whites. (Table 3.25.1)

For this paper the most important findings of the report are on the effect of racial segregation. In Table 3.23.4 we learn that when we have controlled for students' own background, for characteristics of the school, and for characteristics of the student body, the proportion of white students in a school accounts for very little of the variance in the academic achievement for Puerto Rican, Mexican American and Indian American children, and almost none for Negroes.

The Commission on Civil Rights reanalyzed the Coleman data in tabular form however, and, concentrating on 12th grade Negro students in the metropolitan Northeast and on 9th grade Negro students in 8 regions, was able to show that the racial composition of the classroom in the previous year made a difference in verbal achievement, beyond that of the social class of the pupil and his fellow students or of teacher quality. (106, Appendix Tables 4.1 to 8.12) Moreover, the earlier the grade at which Negroes report first having had white classmates, the higher their achievement. The authors of the report attribute the difference between school

per cent white this year and classroom per cent white last year entirely to the effect of tracking and ability grouping. This may be part of the explanation; but more may be due to a change of schools or to the unreliability of pupil reporting.

The evidence on the extent of ethnic segregation and of academic retardation of minority group children that this survey has made available is invaluable. The evidence on the relation between segregation and retardation is unconvincing, being subject to a number of methodological criticisms: 1) The measures of social class are unreliable. The high non-response rate on home background items and the inaccuracies inevitable in the questionnaire replies of children make it difficult to have confidence in the social class assignment. Part of the effect of the background of fellow students may be due to unmeasured variation in a pupil's own background.

2) The percentage of white schoolmates in the current year or of white classmates in the previous year is a poor substitute for a cumulative measure of school racial experience. Particularly at the 9th grade level is present a poor estimate of past school ethnic composition.

3) A cross sectional analysis with no estimates of original ability or of the original equivalence of segregated and nonsegregated students cannot demonstrate a causal relation between segregation and achievement.

Four-Celled Studies

X	X
X	X

Investigation of the effect on minority pupils of attendance at integrated schools has only rarely employed a model which can be called even quasi-experimental, in that it involves "before" and "after" measure-

ments of desegregated and segregated pupils matched on key variables.

Among studies meeting these criteria the first to my knowledge is, interestingly enough, a 1932 test of the effects of segregation on Japanese American children. (14) The author, Bell, compared the performance of Japanese children in California towns which had enforced segregation for Oriental children with the performance of Japanese children in non-segregated towns (in which the Japanese were 3/5 of the population). The towns were agricultural and the schools very similar, except for the fact of segregation. The segregated and unsegregated children in grades 3-8 were matched on Stanford Binet IQ, age and sex, and their achievement was compared over an 18 month period. The non-segregated pupils were superior in October, but the superiority was reduced by May. The next October new pairs were drawn and the experiment repeated, with the same result. The author's interpretation of the finding is that in the segregated situation a language handicap led to spuriously low IQ scores, so that the matching was not accurate. It seems a pity that IQ scores were not treated as a dependent, as well as a control, variable in this otherwise neat experiment.

The last 3 years have seen a series of experiments in the Northeast and in the Far West whereby ghetto children are bussed to predominantly white schools. In most cases the bussed children have been tested before and 1 or 2 years after the program began and their gains compared with those of unbussed children.

In summarizing these experiments, I will go from smaller to larger programs, beginning with a summer 1966 experiment in West Hartford. (2) Two hundred "poverty area" nonwhite children joined 1,000 white suburban

children grades 2-12 for a 6-week summer school. Pretests and posttests In Iowa Basic Skills were administered to 3rd and 6th graders in the regular winter school in June and October. The control group was defined as the late applicants for whom no places were found. Both experimental and control groups gained, the experimental more but not significantly so.

The Commission on Civil Rights reports on a small bussing program in Seattle, Washington, in the year 1965-66. (106) Seventeen of the transferred first graders were compared with 25 who remained in majority Negro schools and received compensatory education. The former group gained slightly more in reading during the year.

Another small program involved bussing 46 1st grade pupils from Rochester, New York to a suburb, West Irondiquoit. (111, 112) A pool of above-average pupils was selected by kindergarten teachers and assigned randomly to experimental and control groups. Parental objection resulted in some shifts. Out of 15 comparisons on Metropolitan Achievement Tests, the bussed students achieved significantly higher scores in only 6 cases.

In Buffalo, New York, in 1965 there was mandatory bussing of 560 Negro pupils from closed and overcrowded schools to predominantly white schools. (34) Of these, 54 in grade 3 were tested and compared with 60 in a sending school. Comparison on reading shows greater gain for the bussed students. No controls on SES or other variables and no significance tests are reported.

For Syracuse we have a report by Beker on 60 of the 125 Negro elementary children bussed in the year 1964-65 to a predominantly white school (Experimental Group), on 35 children whose parents requested

transfer but for whom places were not available (Control Group 1), and on 36 children whose parents refused transfer (Control Group 2). (13) After the first year there was no significant difference in achievement gain between the 3 groups. This contradicts the evidence on Syracuse reported in Racial Isolation in the Schools of greater gains for 24 bussed children in comparison with an unspecified number of non-bussed children who had the benefit of a compensatory program. (106,p.129) This gain may have been a Hawthorne effect in the first year of the program. In any case, the small numbers involved and the lack of any control on SES, make the Syracuse findings to date quite inconclusive.

We have two sources of information on the results of a bussing experiment in Philadelphia. The Commission on Civil Rights reports that bussed Negro children, of the same social class and reading grade level as Negroes in segregated schools with compensatory education (EIP), had by the 3rd grade surpassed EIP children and equalled students of slightly higher SES in non-EIP segregated schools. (106,p.135) A December, 1966 report by Laird and Weeks may refer to the same experiment; in any case more details are available. (74) Ninety-nine pupils in grades 4-6 were bussed from one segregated school to two integrated schools and compared with the 420 who remained in the segregated school. The bussed pupils performed better on reading and arithmetic tests than their IQ's predicted, especially at the 4th and 5th grade levels. When a smaller sub-sample of control and experimental children were matched on grade, sex and IQ, there were significant gains for the bussed children only on reading and only at the 4th and 5th grade levels.

The Berkeley, California, story reported by the Commission on Civil

Rights (106,p.131) for the 1965-66 year is corroborated by the evaluation of Jonsson for the 1966-67 year. (62) Two hundred and fifty Negro students transported from segregated low SES schools to integrated schools in the Foothills and Hills made higher average gains than in previous years and higher gains than non-bussed students receiving compensatory education. The following table shows the difference for Negro students, grades 1-6, on the Spring 1967 Stanford Achievement Test for paragraph meaning.

Percentages of Negro Reading Scores in Low, Medium and High Tertiles in the Berkeley Grade Schools*

	Low	Medium	High
Predominantly Negro Schools with Compensatory Education	66	27	5
Integrated Foothill Schools in Racially Mixed Areas	33	45	21
Predominantly White Hill Schools Integrated by Bussing	43	44	13

*Adapted from Sullivan, (131)

Sullivan points out that though SES data were not available on individuals, it is probable that Negroes living in the Foothills are of a higher social class than those going to the segregated schools. (131) (This fact rather than integration could thus explain their higher scores.) On the other hand the students bussed to Hill schools are presumably lower class, since they came from a lower-class area of Berkeley. However, we are also told that Negro children were selected for bussing "who were predicted to adjust well emotionally and academically to the new school" and that parental consent was required. (61) In other words, the children

bussed to the Hills might well have been initially superior to their neighbors who remained behind.

Project Concern, which involves bussing central Hartford Negro and Puerto Rican students to several suburbs in the metropolitan area, has been carefully designed. (80, 81) Intact classes were randomly selected from 8 eligible elementary schools in the low SES North End (85% nonwhite). All 300 children in these classes with an IQ of 80 or above were bussed, except 12 cases where parents refused and a random 22 where no places were available. A control group of 303 children was drawn from the same schools and proved to be like the experimental group in grade distribution (K-5) but to have more girls.

A unique feature of this project is that, by selecting whole classes, central city teachers were released to accompany the pupils to their new schools and supply extra remedial and guidance services. Not all bussed students received this supportive team assistance, however, so that it was possible to compare bussed students with and without support, with non-bussed students with and without compensatory education in their segregated schools.

The project director Mahan, in his evaluation of the 1966-67 year, concludes that 1) the bussed students with supportive assistance outperformed the other 3 groups; 2) bussed students without supportive assistance did no better on the average than non-bussed students; and 3) compensatory education did not help those who remained in the inner city. However, a careful examination of the tables reporting the results of the 66 tests of ability and 23 tests of school skills for the 6 grades involved indicates, that Mahan's conclusion is too strong. (82)

Significantly higher gains for the bussed students with support was found in 29-39% of all the tests adminstered, while non-bussed non-supported students showed higher gains in 12-21% of the tests.

The final bussing study that we review here is the largest - the New York Open Enrollment Study. (40, 42) In 1965-66 over 1,000 students and in 1966-67 over 1,200 students, grades 1-12, were encouraged to transfer from 25 predominantly Negro and Puerto Rican schools to 38 predominantly white schools. In the first year 1,000+ students chosen in a somewhat random fashion were tested in grades 3-7 and compared with 200+ non-transferred students. In the second year the test results were available for 430 students in grades 5 and 6, but for no control group.

Many interesting process variables were studied by the evaluation teams- instructional quality, pupil interaction, staff, pupil and parent attitudes, among others. I will focus here on the findings on reading achievement only. In April, 1967 the bussed students were performing at a higher level than the non-bussed students, but since they were self-selected and not equal to start with, we must compare gains rather than level. In fact, in neither year did bussed students make significant gains over non-bussed students.

The nine bussing studies that we have just reviewed do not appear to add up to a very convincing case for the beneficial effect of desegregation on minority group performance. Except for the New York program, the numbers involved are really very small. In many cases the numbers tested are considerably smaller than the numbers bussed. This alone would jeopardize the randomness of the sample even if the experimental and control groups were randomly drawn from the same pool. But in no case do we

have assurance on this point. Staff selection or parental self-selection always played a part, even in Hartford, where assignment was most nearly random. Therefore it is both possible and likely that more favorable home background and "achievement press" explain the somewhat better performance of bussed pupils.

In the West Hartford, Hartford and Rochester experiments there is the further complication of bussing out of a central school district into suburban districts where schools have benefits that ampler budgets can buy. As in Boston's METCO experiment discussed in the previous section, we have therefore, no way of comparing the effects of the rival independent variables - school quality and school ethnic composition.

The short duration of most of the programs - too short to offset the stimulation or trauma of transfer - is another reason for concluding that the overall effectiveness of desegregation via bussing programs has not yet been demonstrated and must await further evidence.

Of all the studies on the relation of school ethnic composition to minority group performance, the one with the most nearly adequate design is Alan Wilson's survey reported in the appendix to the Civl Rights Commission Report. (143) The sample is a stratfied random sample of over 4,000 junior and senior high school students in the San Francisco Bay Area. The design is a cross-sectional comparison of students' attitudes and verbal test scores, according to the racial and social class composition of their neighborhoods and schools. But longitudinal control is introduced by the availability of data on school racial composition at each grade level and of 1st grade mental maturity test scores. Wilson argues that controlling on these test scores matches children on the effects of both genetic diff-

erences and preschool environment, so that changes can be attributed to new (school?) experiences and not to uncontrolled initial differences. (143, p.171)

Though the sample is large (over 2,400 Negroes), analysis of the separate effects of neighborhood and school segregation or of racial and social class segregation is hampered in the case of Negroes by the fact that these variables are so confounded and that so few live in inegrated neighborhoods. Nevertheless, by means of regression analysis, Wilson shows that for Negro students 8th grade DAT Verbal Reasoning Test scores 1) rise with the percentage white of the intermediate school, 2) rise still more with the social class level of the school, but 3) with 1st grade mental maturity partialled out, neither the racial nor the social class composition of the school bears a significant relation to achievement, even though the social class effect is stronger than the racial effect and stronger for Negroes than for whites. (143, pp. 180-186)

Beyond the small size of the numbers in some of the cells, there are further limitations to this study. First grade scores would only have been available for the most stable members of the sample, and its representativeness may have been affected by the loss of recent migrants. We are not told whether parental and school social class was based on the questionnaire replies of the students or on school records. Either source is potentially inaccurate. No evidence is offered as to the equality of segregated and integrated schools in Richmond. But in spite of these quibbles, the study is impressive in design and quite convincing that in this community, at least, racial integration per se is not significantly related to the academic performance of Negroes.

CONCLUSION

The literature on minority group performance in segregated and integrated schools offers more evidence as to the methodological difficulties of research in this area than it does as to the relation between school ethnic composition and achievement. Our review of one-celled studies of the performance of children in integrated or segregated situations indicated again and again that scores are higher for those living or studying in a more integrated and more enriched environment - off the reservation rather than on, in continental United States rather than on the island of Puerto Rico, in the urban North rather than in the rural South, in northern towns rather than in metropolitan ghettos. But such comparisons between studies are suggestive at best. They can never establish a relationship.

The "before" and "after" studies of the desegregation of school systems or individuals are more convincing. Following desegregation, of whatever type or at whatever academic level, subjects perform no worse, and in most instances better. Those studies which measure the same individuals at Time 1 and Time 2 - Lee, Archibald, Clark and Plotkin, Katzenmeyer - have thus largely ruled out the enduring characteristics of the subjects and factors in their past (SES, IQ) as explanation of the change. (75, 9, 23, 69) But interaction between desegregation and quality of schooling has not been ruled out. In fact, we are told that desegregation in Washington, D. C. brought an upgrading of education and in Louisville gave a psychological boost to teachers. Such changes could well explain the gain in achievement both in those cities and in situations involving more classroom desegregation. For instance, schools in Philadelphia and in Boston's suburbs are

not equal to the southern schools or central Boston schools from which Lee's and Archibald's subjects came. Nor have these researchers controlled for such other sources of invalidity as contempraneous events in community and school, (a racial incident, for instance) or maturation, or the effect of the first testing.

The pre-Coleman cross-sectional studies I have reviewed are for the most part so small-scale and statistically limited that we can have little confidence in the generalizability of their findings. The Bureau of Indian Affairs study, while large-scale, did not succeed in isolating the effect of racial isolation from the effect of other variables. (27) Matzen's correlational analysis found no difference uniquely attributable to classroom per cent Negro. (83) The criticisms of the Coleman data and their analysis have already been referred to - the sampling problems, the poor measure of social class, the failure to separate the effects of neighborhood SES and of school quality, the imprecise and non-longitudinal measure of school ethnic composition. In spite of these limitations, the survey provides fairly convincing evidence as to the existence of a powerful relation between social class integration and achievement. As to a residual relation between ethnic integration and achievement, the evidence is less clear. The effect appears to be small, but could be either exaggerated or masked by inadequate control of school quality and home background characteristics.

In theory, four-celled studies can avoid most of the weaknesses of both panel and cross-sectional research. But no investigation to date has been able to meet all the canons of pure or quasi-experiments. Bell's early study of Japanese Americans suffered from the difficulty of matching

segregated and non-segregated children on language proficiency. (14) It is likely that the interaction of selection and maturation obscured real gains. In a sense this study captures the problem of all attempts to equate naturally segregated and non-segregated populations. Isolated groups, even those of English-speaking backgrounds, do not "speak the same language" as white middle-class Americans. Wilson achieves a post-facto "before" measurement by controlling on primary grade mental maturity. (143) This procedure has methodological elegance but may mask the effect of racial segregation. Children from segregated backgrounds who get the same IQ scores as children from integrated backgrounds may be surmounting greater obstacles to do so, and therefore have more ability or more home "achievement press", (even if "equated" on parental occupation). As they mature, the benefit of such background and the handicap of segregation may cancel each other out, if IQ score is held constant.

If bussing studies could randomly assign subjects to experimental and control groups, the matching problem would be avoided; but politics and parental preferences seem invariably to bias the selection. The on-going Hartford experiment, which apparently is achieving more random selection than the other projects reviewed, should therefore be followed with interest. Another aspect of the selection problem is what Campbell and Stanley call "mortality", a differential subsequent dropout from experimental or control groups if certain children leave town, leave the program, or are not tested. Few of the bussing studies referred to have measurements on all children originally selected. Furthermore, small or non-representative samples cannot reveal those effects specific to each IQ, personality or SES sub-group.

The small number of children involved in most bussing experiments not

only handicaps statistical tests of their effectiveness, but also probably adds to the Hawthorne effect for those involved. The stimulation or embarrassment of being a guinea pig or a newcomer is probably short-run and can be discounted if the experiment is of long enough duration. But the effect of riding a bus to a community other than one's own might be continuing and could only be controlled if students were bussed both to a segregated and to an integrated school.

This raises the question of whether, as most critics of the Coleman report claim, the ideal test of the effect of integration on children is a study in which children are measured "before" they are desegregated. (30, 36, 94, 103) True, this fits the classic model. But I would argue that the most ideal imaginable experiment of this kind would only tell us about the effect of desegregation, a potentially traumatic process. If any evidence beyond our common sense and common values is needed on the consequences of school ethnic composition - and I am not sure that it is - then it is evidence as to which kind of neighborhood a child should be born into and which kind of school should be his from kindergarten on. Comparisons of children who have always been integrated with children who have always been segregated therefore seem more relevant, even though securing a "before" measurement and random assignment to groups becomes a challenge to the ingenuity of researchers.

The laboratory experiments of Katz and the lessons he draws from them are very convincing as to the "threats" and "facilitations" involved in the process of desegregation. (64, 65, 67, 68) Though as yet unsupported by adequate field research, the most plausible hypothesis is that the relation between integration and achievement is a conditional one:

the academic performance of minority group children will be higher in good integrated than in good segregated schools, providing they are supported by staff and accepted by peers. As evidence for the first condition I refer to the report from Hartford that only the bussed students who received staff support in their new schools showed gains over non-bussed students. (80, 81) As evidence for the second condition, we have the findings of Racial Isolation in the Schools on the importance of interracial friendship to achievement in an integrated setting. (106, p.100, See also 65, p.20) In this review I have consciously ignored the growing and important literature on the relation of ethnic integration and self concept, on the one hand, and of self concept and achievement, on the other. As Wilson and Pettigrew suggest, we must assume a very complicated, two-way process by which the three variables interact. (143, 102) Support by staff and acceptance by peers undoubtedly contribute to both.

In the Introduction I suggested that in rapidly changing times the nature of variables and their interrelationship may change. This review has found clear evidence of a relation between economic integration and academic achievement, less conclusive evidence of a relation between ethnic integration and achievement. But the research we have examined refers to the immediate or distant past. The meaning of integration may be changing and the conditions under which it is implemented can be made different in the future.

One good reason that there has been no adequate research to date on the effect of integration is that there have been no adequate real-life tests - no large-scale, long-run instances of ethnic integration in top-quality majority-white schools and no large-scale long-run instances of

top-quality schooling in segregated minority-group schools. Until our society tries such experiments, our researchers will not be able to evaluate them.

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